IN THE DRAWINGS

Attached are marked-up copies of Figs. 3, 8 and 9, marked in red ink showing proposed changes. The Applicants respectfully request that the drawing amendments be considered.

IN THE CLAIMS:

Please enter the following amended claims:

66. (Amended) A system for modelling thrombopoietic lineage in an individual, said system comprising:

a thrombopoiesis system model including a realistic process progression model, for cells involved in thrombopoiesis, said progression model including multiplication and differentiation; and

a system model modifier, wherein said thrombopoiesis system model is modified by the system model modifier based on parameters specific to the individual.

67. (Amended) The system of claim 66 wherein the system model comprises a realistic progression of cells involved in diseased thrombopoiesis.

68. (Amended) The system of claim 67 wherein diseased thrombopoiesis includes thrombocytopenia.

69. (Amended) The system of claim 67 wherein the system model comprises effects of at least one drug in the realistic progression of cells involved in thrombopoiesis.

70. (Amended) The system of claim 69 wherein said at least one drug is thrombopoietin (TPO).

71. (Amended) The system of claim 67 wherein said process model is adapted to imitate a course of the individual's bone marrow progression, peripheral platelet counts and TPO concentration changes.

72. (Amended) The system of claim 67, wherein said process model comprises cell-suppressive treatment effects and effects of administration of TPO to a patient.

73. (Amended) The system of claim 72, wherein said cell-suppressive treatment is chemotherapy.

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75. (Amended) The system of claim 74 wherein said compartments include:

a stem cell (SC) compartment that is capable of modeling bone marrow haemopoietic progenitors that have an ability to differentiate into more than one cell line wherein cells in the stem cell compartment proliferate, mature and differentiate into one of megakaryocyte progenitors and new stem cells;

a colony forming units - megakaryocytes (CFU-Meg) compartment that is capable of modeling megakaryocyte progenitors getting committed as a megakaryocyte line and spending some time multiplying and maturing;

a megakaryoblast (MKB) compartment that is capable of modeling receiving of cells from CFU-Meg, wherein the cells in the MKB compartment have lost their ability to proliferate but are not mature to release platelets;

an MK16 compartment that is capable of modeling receiving of cells from the MKB compartment, wherein a subset of cells in the MK16 compartment release platelets at a constant rate until the subset of cells exhaust their capacity and are disintegrated and a second subset of cells do not release platelets but continue with endomitosis;

an MK32 compartment that is capable of modeling receiving of the second subset of cells from the MK16 compartment, wherein a subset of cells in this compartment release platelets and a second subset of cells do not release platelets but continue with endomitosis;

an MK64 compartment that is capable of modeling receiving of the second subset of cells from the MK32 compartment wherein a subset of cells in this compartment release platelets and a second subset of cells do not release platelets but continue with endomitosis;

an MK128 compartment that is capable of modeling receiving of the second subset of cells from the MK64 compartment wherein a subset of cells in this compartment release platelets;

a platelets (PL) compartment.

76. (Amended) The system of claim 75 wherein the process model is capable of considering an effect of apoptosis with an overall effect of cell proliferation in giving rise to an amplification of cell numbers in a corresponding compartment.

77. (Amended) The system of claim 75 wherein the process model further comprises the effects of TPO on the SC, CFU-Meg and MKB compartments.

C3 cont

81. (Amended) The system of claim 77, wherein a transit time of a cell is same in all platelet releasing compartments and the transit time of a cell of the SC, CFU-Meg and MKB compartments are functions of micro-environmental conditions.

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82. (Amended) The system of claim 81 wherein in the SC compartment when the TPO concentration is above the threshold, the transit time of a cell is shortened based on the dose.

83. (Amended) The system of claim 81 wherein in the CFU-Meg and MKB, the transit time of a cell is solely based on TPO concentration.

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91. (Amended) The system of claim 66, wherein said model is capable of being used for recommending an optimal treatment protocol, wherein said system further comprises:

a plurality of treatment protocols; and

a selector to select an optimal treatment protocol from said plurality of treatment protocols based on the modified system model.

92. (Amended) A system for modelling thrombopoietic lineage in a general human patient, said system comprising a thrombopoiesis system model including a realistic process model for cells involved in thrombopoiesis.

93. (Amended) The system of claim 92 wherein the system model comprises a realistic progression of cells involved in diseased thrombopoiesis.

94. (Amended) The system of claim 93 wherein diseased thrombopoiesis includes thrombocytopenia.

95. (Amended) The system of claim 93 wherein the system model comprises effects of at least one drug in the realistic progression of cells involved in thrombopoiesis.

96. (Amended) The system of claim 95 wherein said at least one drug is thrombopoietin (TPO).

97. (Amended) The system of claim 93 wherein said process model is adapted to imitate a course of the patient's bone marrow progression, peripheral platelet counts and TPO concentration changes.

98. (Amended) The system of claim 93, wherein said process model comprises cell-suppressive treatment effects and administration of TPO to the patient.

101. (Amended) The system of claim 100 wherein said compartments include:

a stem cell (SC) compartment that is capable of modeling bone marrow hemopoietic progenitors that have an ability to differentiate into more than one cell line wherein cells in the stem cell compartment proliferate, mature and differentiate into one of megakaryocyte progenitors and new stem cells;

a colony forming units - megakaryocytes (CFU-Meg) compartment that is capable of modeling megakaryocyte progenitors getting committed as a megakaryocyte line and spending some time multiplying and maturing;

an MK16 compartment that is capable of modeling receiving of cells from the MKB compartment, wherein a subset of cells in the MK16 compartment release platelets at a constant rate until the subset of cells exhaust their capacity and are disintegrated and a second subset of cells do not release platelets but continue with endomitosis;

an MK32 compartment that is capable of modeling receiving of the second subset of cells from the MK16 compartment, wherein a subset of cells in this compartment release platelets and a second subset of cells do not release platelets but continue with endomitosis;

an MK64 compartment that is capable of modeling receiving of the second subset of cells from the MK32 compartment wherein a subset of cells in this compartment release platelets and a second subset of cells do not release platelets but continue with endomitosis;

an MK128 compartment that is capable of modeling receiving of the second subset of cells from the MK64 compartment wherein a subset of cells in this compartment release platelets;

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a platelets (PL) compartment.

102. (Amended) The system of claim 101 wherein the process model is capable of considering an effect of apoptosis with an overall effect of cell proliferation in giving rise to an amplification of cell numbers in a corresponding compartment.

C10 Cont

103. (Amended) The system of claim 101 wherein the process model further comprises the effects of TPO on the SC, CFU-Meg and MKB compartments.

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107. (Amended) The system of claim 103, wherein a transit time of a cell is same in all platelet releasing compartments and the transit time of a cell of the SC, CFU-Meg and MKB compartments are functions of micro-environmental conditions.

108. (Amended) The system of claim 107 wherein in the SC compartment when the TPO concentration is above the threshold, the transit time of a cell is shortened based on the dose.

109. (Amended) The system of claim 107 wherein in the CFU-Meg and MKB, the transit time of a cell is solely based on TPO concentration.

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117. (Amended) The system of claim 92, wherein said model is capable of being used for recommending an optimal treatment protocol, wherein said system further comprises:

a plurality of treatment protocols; and

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a selector to select an optimal treatment protocol from said plurality of treatment protocols based on the modified system model.

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332. (Amended) A method for modelling thrombopoietic lineage in an individual, said method comprising:

realistically modelling a process to create a process model for cells involved in thrombopoiesis; and

modifying the process model based on parameters specific to the individual.

333. (Amended) The method of claim 332 wherein a realistic progression of cells involved in diseased thrombopoiesis is incorporated in the process model.

334. (Amended) The method of claim 333 wherein diseased thrombopoiesis includes thrombocytopenia.

335. (Amended) The method of claim 333 wherein effects of at least one drug in the realistic progression of cells involved in thrombopoiesis is incorporated.

336. (Amended) The method of claim 335 wherein said at least one drug is thrombopoietin (TPO).

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338. (Amended) The method of claim 333, wherein said process model comprises cell-suppressive treatment effects and administration of TPO to a patient.

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341. (Amended) A method for modelling thrombopoietic lineage in a general human patient, said method comprising:

realistically modelling a process to create a process model for cells involved in thrombopoiesis.

342. (Amended) The method of claim 341 wherein a realistic progression of cells involved in diseased thrombopoiesis is incorporated in the process model.

343. (Amended) The method of claim 342 wherein diseased thrombopoiesis includes thrombocytopenia.

344. (Amended) The method of claim 342 wherein effects of at least one drug in the realistic progression of cells involved in thrombopoiesis is incorporated.

345. (Amended) The method of claim 344 wherein said at least one drug is thrombopoietin (TPO).

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347. (Amended) The method of claim 342, wherein said process model comprises cell-suppressive treatment effects and administration of TPO to the patient.